
Airside Operations Directive

Airport Orientation

Revised July 2015

Glossary

Airport Operations Coordination Centre.....	AOCC
Airside Vehicle Operating Permit	AVOP
Canadian Aviation Regulations	CARs
Central De-Icing Facility	CDF
Emergency Access Routes	ER
Foreign Object Debris/Damage.....	FOD
Glide Path	GP
Ground Support Equipment.....	GSE
Instrument Flight Rules	IFR
Instrument Landing System.....	ILS
Localizer	Loc
Ottawa Macdonald-Cartier International Airport Authority.....	OMCIAA
Passenger Terminal Building.....	PTB
Precision Approach Path Indicators	PAPI
Restricted Area Identification Card	RAIC
Runway	RWY
Runway Threshold Identification Lights	RTIL
Runway End Safety Area.....	RESA
Standard Operating Procedures	SOP
Taxiway	TWY
Transport Canada	TC
Visual Flight Rules	VFR

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Introduction

Before you started working at the Ottawa Macdonald-Cartier International Airport (the airport), you probably were never aware of its complexity. An airport is a very busy place with many organizations working collectively to ensure the safety and security of the travelling public and the employees within these organizations.

You should know that aircraft normally take-off and land into the wind under the guidance of the NAV CANADA Control Tower (the Control Tower). There are men, women and equipment behind the scenes responsible for keeping the place going.

Everyone's job appears easy at first, until a hands-on encounter brings the realization that there is an awful lot to learn!

You will become aware that:

- there is a "groundside" and an "airside";
- runways have numbers, like "14" and "32"
- there are taxiways with names like "Alpha" and "Bravo";
- the people in the control tower are talking at the same time to aircraft pilots, equipment operators, individuals with portable radios and anyone and anything that moves (except the birds); and
- there are many acronyms to learn, eg: RAIC, PTB, ,AOCC, SOP, AVOP, PAPI, GSE; and there are lots of things with odd names, like transmissometers and localizers.

This orientation manual has been provided to you so that you can become familiar with the operation of the airport and many of its rules and directives, and to ensure your safety and that of others while you carry out your duties as a member of the airport community.

The Ottawa Macdonald-Cartier International Airport

The airport operates under a Civil Aviation Airport Certificate issued by the Minister of Transport pursuant to Part III of the Canadian Aviation Regulations (CARs) under authority of the Aeronautics Act, Certificate Number 5151-1-137. As such, all airport operations must be compliant with the rules set out in these regulations.

The airport is located in the City of Ottawa, and occupies a total land area of approximately 4,420 acres (1790 hectares).

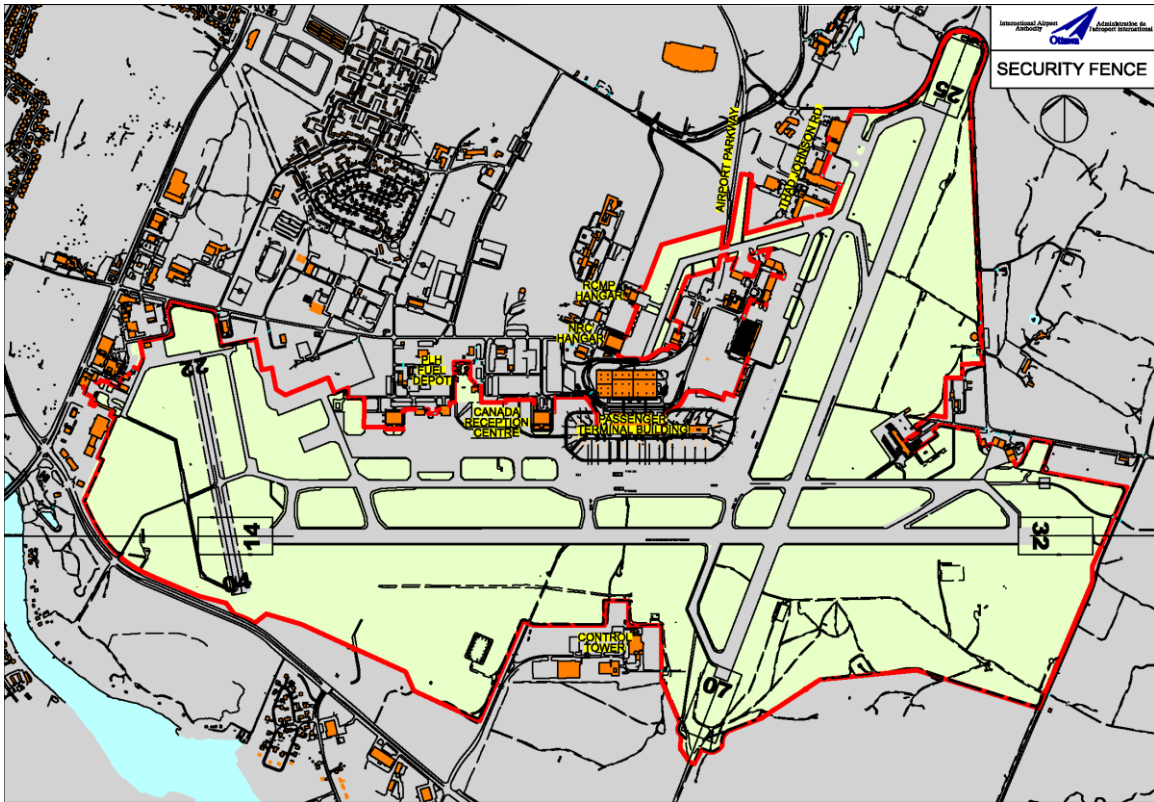
The airport land is owned by Transport Canada. The Airport is managed and operated by the Ottawa Macdonald-Cartier International Airport Authority (OMCIAA) under a 60 year lease which commenced in 1997.

The airport is operational 24 hours per day, 7 days a week and is capable of supporting both visual flight rules (VFR) and instrument flight rules (IFR).

The movement areas consist of three runways complete with an adjoining taxiway system, a large apron servicing commercial aircraft, a specialized Central De-Icing Facility as well as several private aprons. The two main runways are Runway 07/25 and Runway 14/32. There is also a general aviation runway, Runway 04/22, with an associated adjoining taxiway system and apron.

Like all airports, the Ottawa International Airport is divided into a groundside that the public can access without security clearance, and an airside, where access is restricted only to individuals in possession of a restricted area identification card (RAIC). The maneuvering area, specifically, is provided to allow for activities associated with the taking off and landing of aircraft.

The following image shows the overall layout of the Ottawa International Airport, and the division between groundside and airside, as illustrated by the red line following the perimeter of the airside. Note that in places the dividing line crosses through buildings. This is because the division between groundside and airside, while enforced by a fence in most places, can also be enforced by the layout of a building that only allows access to airside through controlled passages.



The airside of an airport is a specialized working environment that is governed by rules designed to prevent accidents and minimize the risk of injury to all persons within it.

Safety is paramount and is the cornerstone of our industry. The travelling public depends on us for their safety. Our fellow employees rely on us to work safely. It is imperative that you be constantly aware of your surroundings and the task at hand. If in doubt, ask your supervisor.

3.0 Airside Safety

3.1 Airside Safety - Safety is Everyone's Business

Safety means being alert and practicing safe habits at all times, not only at work but at home and at play. By making this “commitment”, there is emphasis on being dedicated to making conscious and continual (not sporadic) efforts. With everyone doing their share and following the right safety practices, there will be a positive relationship between employees and their work environment.

Safety is for life and it is truly long term. There's nothing more important than helping to prevent injuries and being able to save lives. We all need constant reminders about behaving in a safe manner at all times.

The quest to improve upon safety practices also never stops. Processes and procedures are never old – innovative approaches and ideas are always welcome. Improved safety practices help to further reduce unnecessary risk.

Leadership in safety is best demonstrated by thoughtful and urgent action. With a “Start Today” attitude, what better way is there to spread the word about the importance of a lifelong approach to improving our workplace?

3.2 Reflective Safety Vests

Employers must ensure that their employees are in compliance with the Canada Labour Code Part II, which states that where an employee is regularly exposed to contact with moving vehicles during his or her work, he or she shall:

- Wear a high-visibility vest or other similar clothing; or
- Be protected by a barricade that is readily visible under all conditions of use.

3.3 Personal Protective Equipment

In addition to wearing a reflective safety vest, personnel working airside are required to wear approved hearing, eye and hand protection, and steel-toed footwear when needed.

3.4 Smoking

Smoking is not permitted anywhere airside. This includes e-cigarettes and vaporizers. No person shall smoke, carry or deposit lit cigars, cigarettes, e-cigarettes, vaporizers, pipes or matches or carry an open flame on airside. This also applies to any other airside areas at the airport such as staircases, baggage rooms, bridges, ramp crew shelters, inside and outside vehicles, equipment and airside buildings.

Charges can be laid under the Canadian Aviation Regulations for violation of rules regarding smoking airside.

3.5 Alcohol and Drugs

No person working airside shall be under the influence of any substance, including alcohol, illicit drugs or medications that have the potential to adversely affect their performance in any way.

Operating a vehicle under the influence is an offence under the Criminal Code of Canada and the Highway Traffic Act.

3.6 Personal Audio Equipment/Cell Phones

No person shall carry or use personal audio/visual equipment such as portable CD players, MP3 players, iPods, portable DVD players, or cassette players while working airside. Personal cellular telephones and portable communication devices such as, but not limited to, blackberries, are not to be used on airside. Cellular telephones and portable communication devices are authorized for **OPERATIONAL PURPOSES ONLY**. Portable communication devices shall **not** be used while driving a vehicle or other equipment unless (i) the vehicle is pulled over and brought to a complete stop in a safe location or (ii) it is used with hands-free technology approved by law for such purpose (such as "bluetooth" or hands-free speakers).

3.7 Bicycles Airside

No person shall bring or ride a personal bicycle airside. Skateboards, roller blades and inline skates are also prohibited.

(Exception: Police Service bicycles used for operational requirements are permitted on the apron and services roads only, and approved areas defined by the OMCIAA).

3.8 Jet Blast

Pedestrians or vehicle operators shall remain a safe distance from areas affected by jet blast, and shall not pass in front of or closely behind an aircraft with the engines running and/or when the aircraft anti-collision lights are on unless the wheels of the aircraft are chocked or the marshaller waves permission.

3.9 Spills

If a spill is detected or caused it shall immediately be reported to the Airport Operations Coordination Centre (AOCC) at 613-248-2111. The polluter is responsible for cleaning up any spills to the satisfaction of the OMCIAA. For additional information concerning fuel, glycol, chemical and other spills, refer to the Airport Emergency Management Plan.

3.10 Apron Fire Extinguishers

The OMCIAA maintains the apron fire extinguishers. The responsibility for training and the safe use of these extinguishers remains with the air carriers and ground service handlers. Training is available from the OMCIAA Emergency Response Services at 613-248-2145. Blocking access to the apron fire extinguishers by parking vehicles and/or equipment around them is prohibited.

3.11 Foreign Object Debris/Foreign Object Damage (FOD)

Foreign Object Debris is the term used to describe any uncontrolled object, material, part or natural element (ie. metal, wood, plastic, clothing, ice, sand, etc.) on an aircraft movement surface that has the potential to accidentally encounter an aircraft causing damage to an aircraft or injuring persons.

Foreign Object Damage is the term used to describe damage to an aircraft caused by foreign object debris present on an aircraft movement area.

Both these terms are commonly abbreviated by the term FOD.

Foreign material on any area of an aircraft movement surface shall be removed immediately by a vehicle operator and may be placed in appropriate FOD barrels that are strategically placed on the apron for this purpose. Vehicle operators must never leave FOD on any movement / maneuvering surface without at least attempting to remove it. If it is not possible for the operator to remove the debris, he/she must immediately report the foreign material to their supervisor and notify the Airport Operations Coordination Centre (AOCC) at 613-248-2200. If possible, remain by the debris until a clean-up crew arrives.

No person shall:

- a) throw, deposit or knowingly leave on a road, apron or maneuvering area any glass, nails, tacks, scraps of metal, chemical substance or other material that may damage an aircraft, vehicle or equipment; or
- b) throw, deposit or knowingly leave any form of trash or garbage except in containers provided for that purpose.

Foreign material such as mud and gravel can seriously damage aircraft engines. Vehicle operators should ensure that the surfaces of movement or maneuvering areas are kept clean by checking that wheels and tires are clean before they enter these areas.

Loose baggage and other articles that have fallen from baggage carts should be moved to a safe location alongside the terminal building, a gate or entrance/exit point or returned to the originator in accordance with company procedures.

3.12 Apron Waste Management

Airside operators are responsible for the proper disposal of waste. The OMCI AA is responsible for providing waste bins on the apron and the services associated with the timely removal of waste. These bins are strategically located on the apron for this purpose. Overloaded bins shall be immediately reported to the AOCC at 613-248-2200 in a timely manner so as to avoid the potential dangers associated with FOD. Waste bags must not be placed on the apron surface. They must be securely fastened/tied to ensure that garbage is not strewn outside the bins when placed in the apron waste bins.

Vehicle operators must never park vehicles or equipment in the “no parking” zones identified around the apron waste bins or garbage compactors.

3.13 Ground Support Equipment (GSE) - Refuelling Areas

Refuelling of GSE is the responsibility of the ground service provider. Upon request, the AOCC will assign an area for GSE refuelling operations.

Airside operators will not refuel equipment using fuel cans (“jerry cans”) on airside. Under special circumstance the approval **must** be granted by the OMCI AA Operations Manager.

The storage of flammable liquids, lubricants and other hazardous goods/materials are strictly prohibited on the apron and on airside. All requests for such storage must be approved by the OMCI AA well in advance and must comply with all related Acts and Regulations.

No person shall refuel GSE within 15 m (50 ft.) of a building or an aircraft.

No person shall park an aircraft fuel servicing vehicle within 15 m (50 ft.) of the Passenger Terminal Building (PTB), cargo buildings, hangars or any other airport structure designed to house the public that has windows or doors in any exposed walls.

3.14 Restricted Area Identification Card (RAIC)

A person who is not in possession of a valid Restricted Area Identification Card (RAIC) shall not enter or remain in an area designated by a sign as a Restricted Area. A person with a RAIC shall wear it on his/her outer clothing, ensuring it is always visible while in a restricted area.

A person not displaying a RAIC in a restricted area should be considered unauthorized and shall be reported immediately to the AOCC at 613-248-2111.

3.15 Reporting Hazardous Conditions and Accidents

A person encountering a hazardous condition on any aircraft movement surface shall report its nature and location immediately to their supervisor and/or the Airport Authority in order for corrective action to be taken.

All accidents shall be reported to the AOCC at 613-248-2111 immediately. In the case of vehicle accidents, vehicles are not to be moved unless there is a possibility of further injury or damage to property. All personnel involved in the accident and any witnesses must remain at the scene until the accident investigation is complete.

All other personnel shall remain clear of an accident scene unless authorized by the OMCIAA Operations Manager or responsible agency.

4.0 The Apron

4.1 Apron/Ramps

The words "apron" and "ramp" are often used interchangeably. Pre-flight activities are conducted on ramps. Apron areas are where aircraft park, passengers board and deplane, cargo is loaded, aircraft refueling and maintenance occurs, and includes the movement of vehicles and pedestrians engaged in the servicing of aircraft.

Your work may require you to drive on an apron. If so, you must be very careful. Watch out for aircraft that are moving and always yield the right-of-way to them. Don't assume the pilot will see you and stop. He or she may be busy with other things like radio communications or checklist items.

In addition to watching for moving aircraft, be careful not to get too close to a parked aircraft. Aside from nicks and dents that are expensive to repair, you could be hurt if an aircraft suddenly started its engine and you were too close. You should also be aware of the problem of jet blast or prop wash. One way to tell if an aircraft is about to start its engine(s) or if the engine(s) are running is that the aircraft's anti-collision lights (flashing beacons) will be activated.

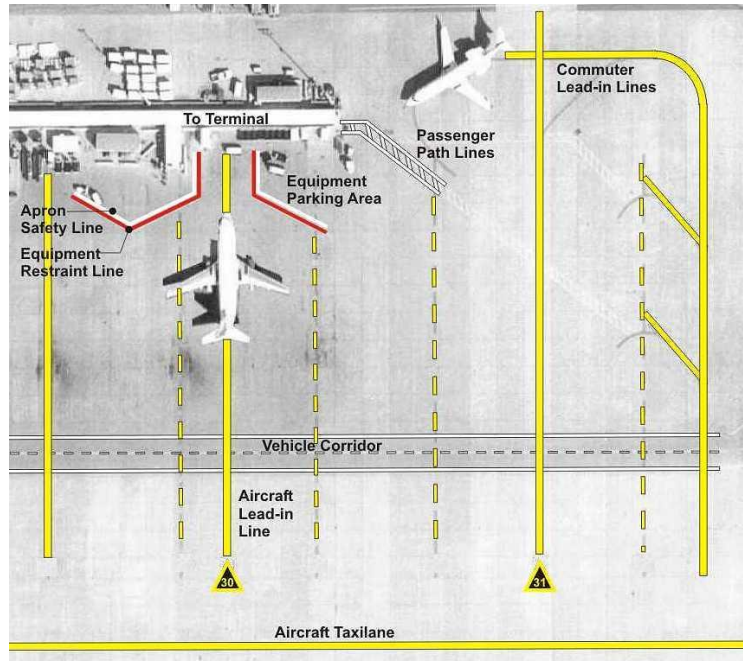
4.2 Passenger Terminal Building (PTB) Apron Markings

On the apron, white pavement markings pertain to vehicles and yellow pavement markings pertain to aircraft. On the runway, all markings pertain to aircraft.

Vehicle corridors, Head of Stand and Tail of Stand roads are marked by parallel solid white lines spaced 7.5 m (24.5 ft.) apart, divided down the middle by a dashed line.

Passenger walkways are identified with white markings, which provide a safe corridor to escort passengers from the PTB to the aircraft (normally commuter type), which are parked on the apron.

White apron safety lines delineate an area which provides adequate clearance for aircraft and delineates safe staging areas for equipment and vehicles. Red equipment restraint lines delineate the restraint area; equipment is not to be left unattended in this area as it is a protected aircraft gating area.



4.3 Aircraft Lead-In Lines

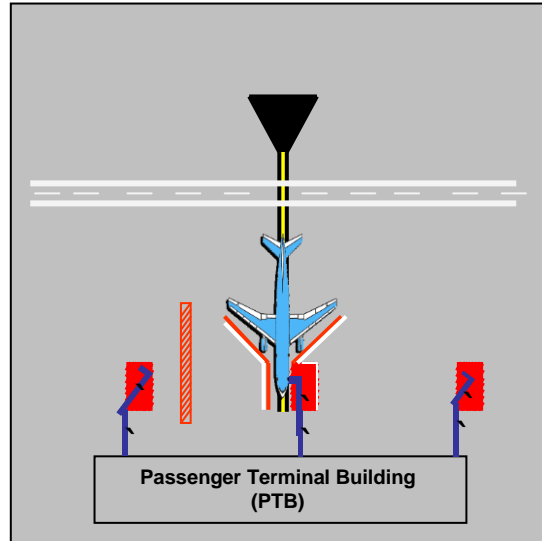
Aircraft lead-in lines are yellow with a black border outline to assist with gating in low visibility conditions. These lines provide guidance to the pilot indicating where to place the aircraft nose wheel to guide them onto a gate. These lines also provide clearance from any fixed obstacles.

4.4 The Vehicle Corridor

The PTB apron area features two main vehicle corridors: the Head of Stand Road which runs underneath the fixed portion of the passenger loading bridges and the Tail of Stand Road which runs behind the tail of aircraft that are on gates. The Head of Stand Road has a height restriction of 3.0m/9.8ft. Vehicle corridors are not guaranteed safe routes. Therefore, caution must be exercised at all times (ie. when travelling further than 1 gate, when travelling from a gate to a baggage room, when pavement markings are obscured for any reason, etc.)

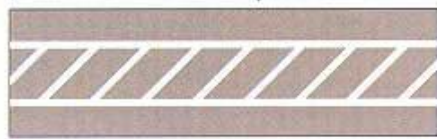
4.5 Operational Stand

The term “operational stand” refers to when the aircraft is parked at a designated gate and the various agencies are servicing the aircraft. Hence an operational stand is provided for the free movement of vehicles performing aircraft-related duties.



4.6 Passenger/Pedestrian Walkways

A passenger walkway is delineated by white surface markings on apron areas intended for pedestrian traffic.



4.7 Safety of Passengers on the Apron

At specific gates, passengers will board/deplane onto the apron. This will also occur when a passenger loading bridge is out-of-service. Individual airlines are responsible for escorting their passengers to and from an aircraft or operational stands.

An airside vehicle operator encountering such a situation in progress must always give the right-of-way to passengers/pedestrians.

4.8 Use of Safety Cones

The use of safety cones on an apron/ramp is required to alert passengers and ground service providers of potential apron hazards, such as electrical wires, aircraft engines, and wingtips. Ground handlers will use cones where a portion of an aircraft protrudes into a vehicle corridor or to appropriately direct passengers around an aircraft for apron-loading aircraft.

5.0 The Baggage Rooms

5.1 Baggage Room - General

There are two baggage make-up rooms at the airport: namely, domestic/international and transborder. Each baggage room within the PTB includes several distinct sub-systems, all of which begin or terminate in the domestic/international or transborder baggage rooms.

The baggage make-up rooms at the airport enforce the use of zero emission electric vehicles (i.e. tractors). The specifications and the terms of use of these tractors within the baggage room are stipulated in *Standard Operating Procedure: Ground Services Equipment – Environmentally Friendly Tugs*.

The use of zero emission vehicles is mandated in the baggage make-up rooms. As such, the transfer to and from electric baggage carts must be done outdoors.

Each baggage room is a common space, utilized by air carriers and ground handling service providers for the processing of baggage.

The domestic/international baggage room allows for the baggage handling process of all outgoing domestic and international bags, along with domestic-transborder transfer bags, and all incoming bags.

The transborder baggage room allows for the baggage handling process of all bags destined to the USA.

The two baggage make-up rooms have been designed to allow for sufficient operational processing space taking into account the requirement to allow for the continuous flow of traffic with the intention to minimize bottlenecks and unnecessary delays.

Eye wash stations can be found in each baggage room. Each employee is responsible to know the location of all stations.

Employers are responsible to ensure that their employees working in a baggage room receive appropriate training, wear a reflective safety vest and hold a valid Airside Vehicle Operating Permit (AVOP) at all times.

6.0 Airfield Lighting

6.1 General

Airfield lights, signage and surface markings play a significant role in guiding the movement of aircraft and vehicles. Knowledge of the airfield configuration, markings and signs are essential in reducing the potential of a runway incursion or mishap. Every vehicle operator must know the meaning of these lights, signage and surface markings to avoid entering areas where they are not permitted to be, and as a guide to vehicle movement when within the maneuvering areas (runways and taxiways) of the airport.

6.2 Apron Lights

Blue lights are used to outline the edges of aprons. Amber lights are used to outline the intersection of taxiways and aprons/ramps.



6.3 Taxiway Lights

Blue taxiway lights are used to outline the edges of taxiways during periods of darkness or poor visibility.



6.4 Taxiway Intersection Lighting

Taxiway intersections are very easily identified as they are indicated by two blue lights placed at the taxiway intersection.



6.5 Runway Guard Lights

Runway guard lights are a pair of elevated flashing yellow lights that are installed on either side of the taxiway in line with the runway hold short line at taxiway/runway intersections. They are used to increase safety by enhancing the visibility of the hold position, especially during inclement weather conditions, day or night.

Runway guard lights are an additional line of defense against an unintended runway incursion of an active runway by an aircraft or vehicle. They serve to raise situational awareness but do not provide or preclude authority to cross a runway. Pilots and drivers are therefore required to wait until given clearance by Ground Control before crossing a runway.

In the following picture, you can see the hold short line painted on the taxiway, the runway guard light and the red runway sign. All three of these measures are put in place to advise pilots and drivers that you are approaching a runway where you are to stop as requested by Ground Control.



6.6 Runway Lights

Runways are edged with white lights. The control tower can vary the intensity of the lighting to compensate for different conditions of daylight, darkness and weather.



6.7 Clearance or Obstruction Lights

Red obstruction lights are mounted on structures of various types, sizes and heights, which could present a hazard to aircraft. Since our airport is near the city, these lights will extend for a considerable distance from the airport, because of the number of tall buildings.

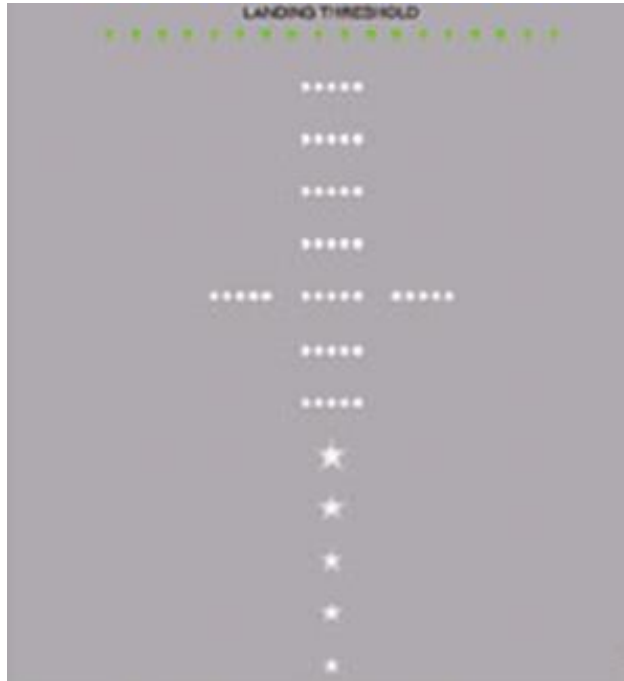
Most of the obstruction lights are found airside, and access to the structures on which they are mounted is your concern. Such structures are easily found on the airport map, as well as on or near the airfield. Obstruction lights are found on:

- the Instrument Landing System (ILS) localizer building;
- the Instrument Landing System (ILS) glide slope antenna;
- the retaining wall between the PTB apron and the Transport Canada Hangar; and
- the Golf taxiway overpass.

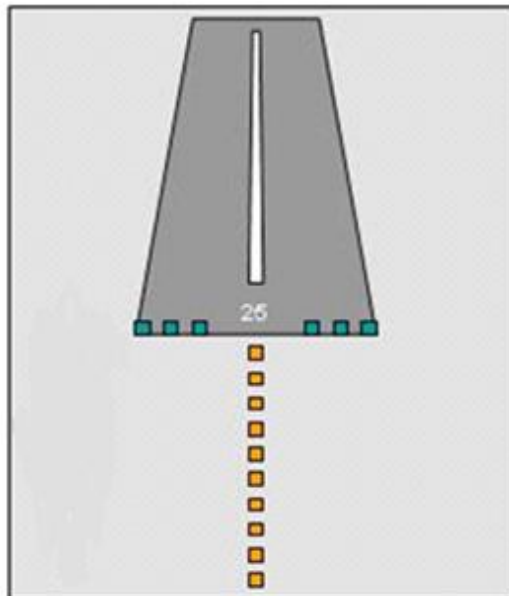


6.8 Approach Lights

Approach lights assist the pilot in transitioning from instrument to visual flight, and to align the aircraft visually with the runway centerline. The airport has both high and low intensity approach lights as shown here.



**High Intensity Approach Lights
Runways 07 and 32**



**Low Intensity Approach Lights
Runway 25**

6.9 Runway Threshold Lights

The runway threshold is the beginning of the portion of the runway that is usable for landing. At the threshold (the end of the runway) you will see runway threshold lights. These are red on one side and green on the other. The red lights are visible to the vehicle operator when he/she is approaching the end of the runway. Threshold lights appear green to the pilot in an approaching aircraft.



6.10 Runway Threshold Identification Lights (RTILs) (Strobe Lights)

Runway threshold identification lights (RTILs) are installed on runway 14 to provide rapid and positive identification of the approach end. The system consists of a pair of synchronized flashing lights that are located laterally on each side of the runway threshold, facing the approach area.

They are effective for:

- Identification of a runway surrounded by a preponderance of other lighting;
- Identification of a runway which lacks contrast with surrounding terrain; and
- Identification of a runway during reduced visibility.



7.0 Airfield Surface Markings

7.1 Apron Markings

The aprons also have directional and traffic controlling signs. The most prominent ones are those that number the aircraft gates. They are usually located on the terminal building at approximately second-story height. The numbers are illuminated for easy identification. The aircraft gate numbers are also painted on the apron surface.

The lead-in lines and vehicle corridors painted on the surface of the apron are of importance to you. To have a large aircraft stop within a few feet of the loading gate, the pilot must start lining up a considerable distance back from the actual stop line. The yellow/black lead-in lines simplify the operation considerably. The pilot places the aircraft nose wheels on the lead-in lines, and follows them into the aircraft gate. Lead-in lines extend a considerable distance into the apron area.

Vehicle corridors are painted on the apron to guide vehicle traffic around the apron. They are two solid white lines, 7.5 meters apart, with a broken centre line.

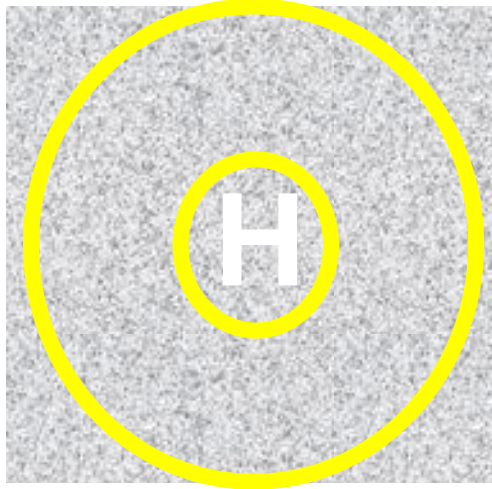
With reference to painted traffic lines on aprons, remember that the yellow lines apply to aircraft, white lines pertain to vehicles and pedestrians, and red lines indicate no parking areas.

7.1.1 Helicopter Pad Markings

The paved surface of areas designated for the arrival and departure of helicopters is designated by two yellow circles with a large white 'H' inside the smaller circle.

All vehicle operators must remain well clear of helicopter areas when a helicopter is present or approaching. Service vehicles must remain outside the perimeter marking of the helicopter arrival/departure areas and parking locations, except when engaged in service to the aircraft, once the engines have shut down and the aircraft is parked. Be especially careful when you drive near helipads and look up for landing helicopters. Like all aircraft, you must yield the right-of-way to a helicopter.

Helicopter pad markings



7.2 Taxiway Markings

Taxiways are designated by letters and are areas used by the aircraft to get to and from the apron/ramp and the runway. Taxiways look similar to runways, but are not as wide and don't have the same kind of paint markings. Taxiway markings are yellow: a single continuous yellow line, 6 inches (15 cm) to 12 inches (30 cm) in width. They serve as a centre-of-aircraft guideline to aid aircraft travelling on taxiways and aprons. Instead of numbers, taxiways are identified by letters using the phonetic alphabet.

7.3 Runway Markings

Runways have specific white paint markings on them. They have white numbers on each end, white stripes down the centre and touchdown zones along both sides of the centre line marking. Runways that are served by an instrument approach have more elaborate markings.

7.4 Runway Centre Line

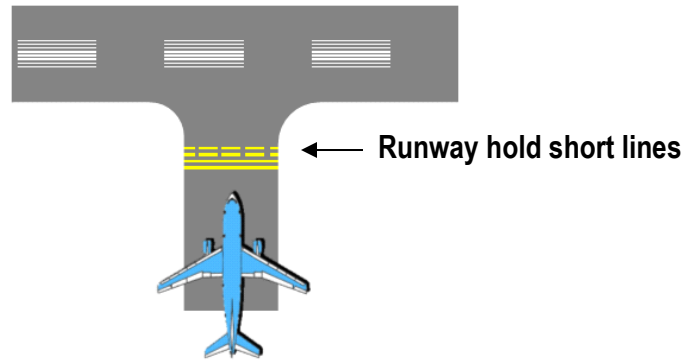
The centre of a runway is marked with a broken white line made up of several lines parallel and close together, each group is 100 feet (30 m) in length with 100 feet (30 m) between.

7.5 Runway Headings (Designation) Markings

Each end of a runway is numbered in tens of degrees corresponding to the direction of the runway in relation to a magnetic compass. For example, the compass of an aircraft will read 250° when approaching the end of a runway marked with the number 25. The numbers are painted white and face towards the end of the runway.

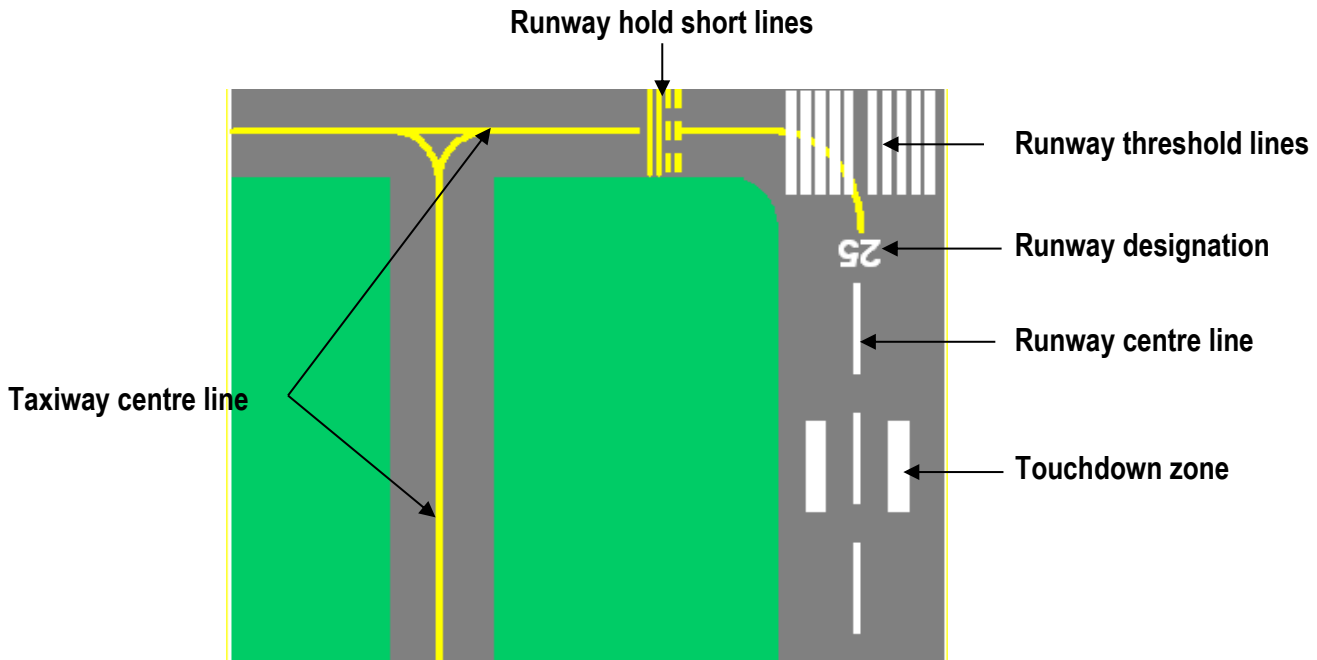
7.6 Holding Position Markings (Hold Short Lines)

As a taxiway comes up to the edge of a runway, you will see the hold short lines. They have two solid yellow stripes followed by two broken yellow stripes. This is the airport version of a stop line. On both sides of the taxiway, in line with the hold short line, there are runway designation signs (white numbers on a red background) with the runway number. This is the airport version of a stop sign. Vehicles and aircraft must stop behind the solid lines and not proceed unless and until permitted to do so by Ground Control.



7.7 Threshold Markings

The beginning of a runway that is usable for aircraft landing may be marked with a series of solid white lines which are parallel to the length of the runway. The lines are in groups. The number of lines in a group, and the number of groups of lines varies according to the width of the runway.



8.0 Airfield Signage

8.1 General

Airfield signs are designed to provide direction and information to taxiing aircraft and assist in safe and expedient movement of aircraft. They are also of value to vehicle operators to identify areas they should not enter or as guides to vehicle operation while in the maneuvering area.

These signs are normally mounted on either the left, right or both sides of a runway or taxiway according to requirements and are located 15 m to 20 m (50' to 65') from the edge of the maneuvering surface.

8.2 Runway Designation Signs

Runway designation signs are red with white numbers. These signs identify a runway intersection ahead and are placed in conjunction with hold short lines (pavement markings) on a taxiway and runway guard lights. Vehicles and aircraft are required to stop at these signs until the ground controller gives clearance to proceed.



8.3 Location Signs

Location signs are yellow letters on black background and identify the location you are currently on. Location signs may be incorporated with other signs such as directional or runway signs.



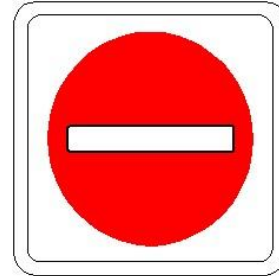
8.4 Directional, Destination and Information Signs

Directional, destination and information signs are black letters on yellow background. They identify the intersecting taxiways the aircraft/vehicle is approaching, with an arrow indicating the direction to turn. They are also used to provide direction to exits, aprons, terminal buildings or other facilities named on the sign.



8.5 Conventional Traffic Signs

Conventional traffic signs such as stop and yield signs are located throughout the airport for the control of vehicle traffic only.



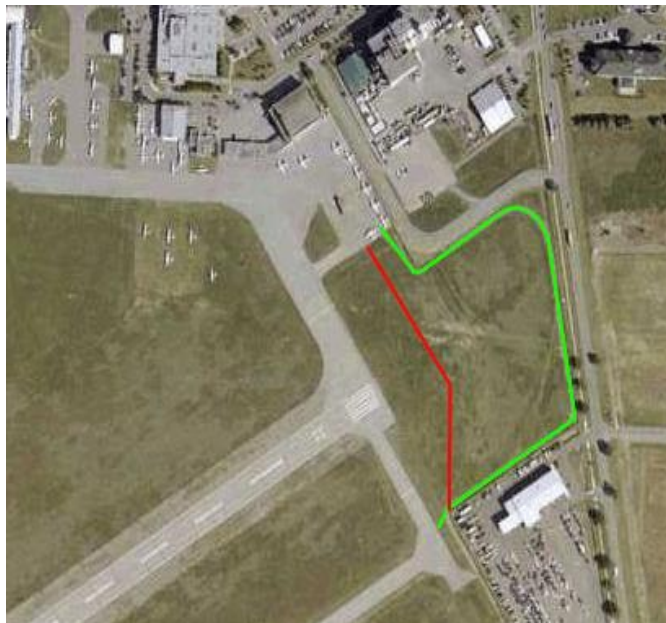
9.0 Airfield Roads

9.1 General

The airfield roads are the proper, safe routes that allow access to different airside facilities on the airport. The most extensive airfield road is the Perimeter Road, which follows the groundside/airside security fence for almost its entire length.

For safety and operational reasons airfield roads should be used whenever possible. A common display of why this is important occurs at the end of runways. Although permission from Ground Control must be obtained before entering within 60 m (196ft) of the side of a runway and within 30 m (98ft) of the side of a taxiway, this distance is much greater at the ends of the runways. These locations are directly in line with the direction in which aircraft take off and land. Therefore, when passing these locations, one must use the nearest airfield road unless they must enter these areas in the course of their duties and permission has been obtained from Ground Control.

This situation is illustrated in the following image. A dangerous mistake is to cut across the grass at the end of the runway along the red line. Without permission from Ground Control, the correct route is along the Perimeter Road (the green line), which leaves a safe distance between the vehicle and the threshold of the runway.



9.2 Airfield Road Signage

The following image shows a sign indicating the stop position at Bowesville Rd. Road.



9.3 Airfield Roads

The airfield roadways are:

- a. Perimeter Road
- b. Transmitter Road
- c. Bowesville Road
- d. Sand Hut Road
- e. Glide Path Road

9.4 Emergency Access Routes (ER)

There are presently six Emergency Access Routes (ER) at Ottawa International Airport, as shown on the map. They are:

- a. ER-1 - Airport Parkway to Gate ER-1 off of Golf taxiway;
- b. ER-2 - adjacent to the threshold of runway 25;
- c. ER-3 - adjacent to the threshold of runway 32;
- d. ER-4 - adjacent to the threshold of runway 07;
- e. ER-5 - West side of runway 14-32 across from Delta taxiway; and
- f. ER-6 - Primary security fence to Mike taxiway



ER Gate 5 – airside view

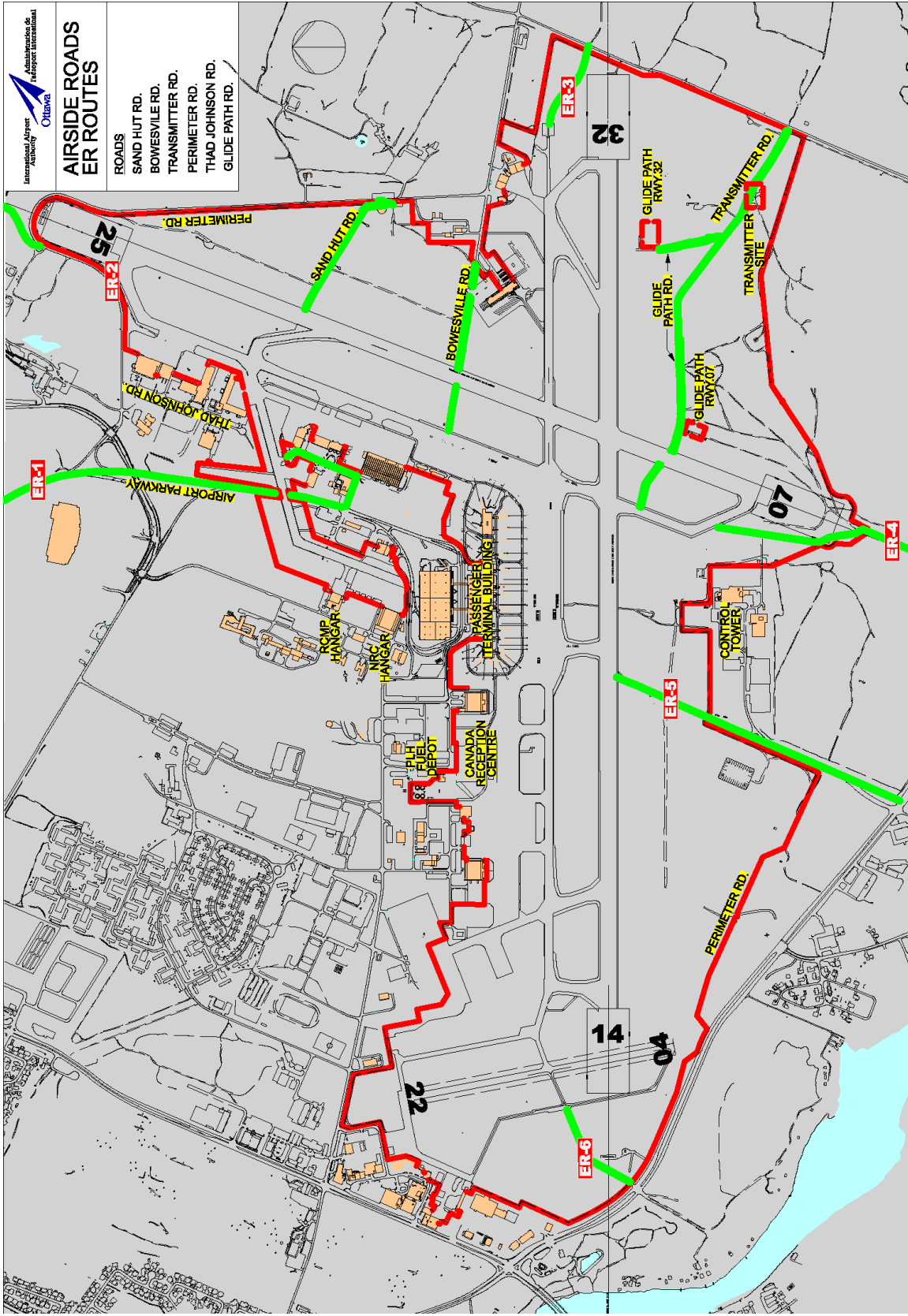


ER Gate 5 – groundside view

Attached is a map illustrating airside road locations.

AIRSIDE ROADS ER ROUTES

- ROADS
- SAND HUT RD.
 - BOWESVILLE RD.
 - TRANSMITTER RD.
 - PERIMETER RD.
 - THAD JOHNSON RD.
 - GLIDE PATH RD.



10.0 Navigational Aids

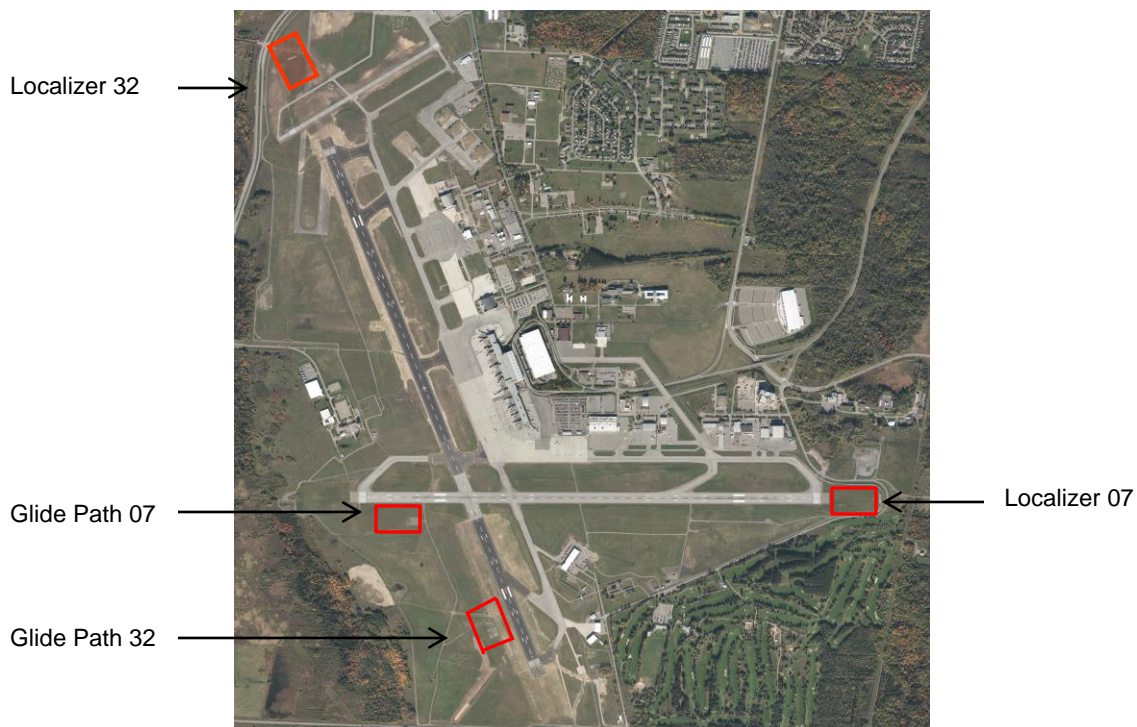
10.1 General

Navigational aids assist in guiding incoming and outgoing aircraft. Around navigational aids there are critical areas, which are sensitive to the presence of vehicles. Vehicle operators must get approval from Ground Control prior to entering these areas.

10.1 Instrument Landing System (ILS)

The Instrument Landing System (ILS) is a ground-based instrument approach system which provides precise guidance to aircraft approaching a runway using radio signals to enable a safe landing during adverse weather such as low ceiling or reduced visibility due to fog, rain, or blowing snow.

Various components make up an ILS. They are the outer marker, middle marker, inner marker, back-course marker, glide path and localizer. The locations of the critical areas associated with the localizer and glide path systems are indicated on the following map.



These and other critical areas are marked by signs like the one in the following image:



10.2 Precision Approach Path Indicator (PAPI)

The Precision Approach Path Indicator (PAPI) is a light system positioned beside the runway that consists of four lights that provide a visual indication of an aircraft position on the glide path for the associated runway.

The PAPI's are usually located on the left side of the runway and can be seen up to five miles away during the day and twenty miles at night.

Each box of lights is equipped with an optical apparatus that splits light output into two segments: red and white. Only the red lights are visible from the ground.

Depending on the angle of approach, the lights will appear either red or white to the pilot. Ideally the total number of lights will change from white to half red, moving in succession from the right to left side. The pilot will have reached the normal glide path (usually 3 degrees) when there is an even split in red and white lights. If an aircraft is beneath the glide path, red lights will outnumber white; if an aircraft is above the glide path, more white lights are visible.

Should a PAPI unit be damaged, it must be immediately reported to the Control Tower and to your supervisor.



10.3 Transmissometers

A transmissometer is an instrument used to measure the extinction coefficient of the atmosphere, and to determine visual range. It operates by sending a narrow beam of energy (usually a laser) to a receiver which determines visual range. These units are found near the runway. They look like a set of telescopes staring at each other.



Transmissometer

11.0 The Phonetic Alphabet

As an employee at an airport you will quickly hear the usage of the phonetic alphabet. It would be to your best interest to be familiar and memorize the phonetic alphabet.

The phonetic alphabet is widely used so that critical information can be pronounced and understood by those who transmit and receive voice messages regardless of their native language, especially when for the safety of navigation and/or persons are involved.

1.1.1 ICAO Phonetic Alphabet and Pronunciations

<u>Letter</u>	<u>Word</u>	<u>Pronounce as</u>	<u>Number</u>	<u>Pronounce as</u>
A	ALFA	(Al fah)	0	ZE-RO
B	BRAVO	(BRAH VOH)	1	WUN
C	CHARLIE	(CHAR lee)	2	TOO
D	DELTA	(DELL tah)	3	TREE
E	ECHO	(ECK oh)	4	FOW-er
F	FOXTROT	(FOLKS trot)	5	FIFE
G	GOLF	(GOLF)	6	SIX
H	HOTEL	(hoh TELL)	7	SEV-en
I	INDIA	(IN dee ah)	8	AIT
J	JULIET	(JEW lee ETT)	9	NIN-er
K	KILO	(KEY loh)		
L	LIMA	(LEE mah)		
M	MIKE	(MIKE)		
N	NOVEMBER	(no VEM ber)		
O	OSCAR	(OSS car)		
P	PAPA	(pah PAH)		
Q	QUEBEC	(keh BECK)		
R	ROMEO	(ROW me oh)		
S	SIERRA	(see AIR rah)		
T	TANGO	(TANG go)		
U	UNIFORM	(YOU nee form)		
V	VICTOR	(VIK tah)		
W	WHISKEY	(WISS key)		
X	X-RAY	(ECKS ray)		
Y	YANKEE	(YANG key)		
Z	ZULU	(ZOO loo)		

To Contact the Ottawa International Airport Authority

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Ottawa, Ontario K1V 9B4

By Phone: 613-248-2000, ext 1111

The OMCIAA would like to thank the following persons for their input and expertise in making this directive as current, applicable and accurate as possible:

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Should you find any errors or omissions in this document, please report them to the above noted address.

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